

100. (new) An isolated nucleic acid encoding a taste cell specific polypeptide, the polypeptide consisting of an amino acid sequence of SEQ ID NO:3 or SEQ ID NO:4.

101. (new) A vector comprising the nucleic acid of claim 99.

102. (new) A host cell comprising the vector of claim 101.

REMARKS

With this amendment, claims 99-102 are pending and under examination. Previously pending claims 1-35 and 37-98 have been canceled. Applicants address the Examiner's rejections in the order presented in the June 15, 2001 final Office Action.

Status of the claims

Claims 99-102 have been added. These claims add no new matter. Support for these claims can be found, e.g., in claims 34, 35, 46, and 47 as originally filed.

Rejection under 35 U.S.C. § 101 and 35 U.S.C. § 112: utility

Claims 32-40, 46, and 47 were rejected as allegedly supported neither by a specific and substantial utility, nor by a well-established utility. Applicants have canceled the prior claims and have submitted new claims to recite nucleic acids consisting of a nucleotide sequence of SEQ ID NO:12 or 13, or nucleic acids encoding a polypeptide consisting of an amino acid sequence of SEQ ID NO 3 or 4. These specific nucleic acid sequence are useful as probes, as described below. To the extent that the rejection applies to the claims as amended, Applicants respectfully traverse the rejection.

As described in the present specification, full length cDNAs that encode a taste cell-specific polypeptide were cloned, and mRNA expression patterns were determined for the clones using *in situ* assays of tongue tissue (*see, e.g.*, Example 1, page 54-55). The claimed nucleic acids, full length cDNAs encoding a protein, are rare transcripts that are preferentially expressed in a subset of taste receptor cells, specifically the Gustducin-expressing taste receptor

cells of the circumvallate and foliate papillae of the tongue (*see, e.g.*, specification, page 8, lines 20-24).

The nucleic acids of the present invention are therefore useful, *e.g.*, as taste cell specific probes and markers because the nucleic acids and the proteins that they encode are specifically expressed in specialized taste cells of the tongue (*see, e.g.*, specification, page 6, lines 15-19). For example, the nucleic acid probes of the invention can be used to identify subsets of taste cell such as fungiform cells, foliate cells and circumvallate cells, or specific taste receptor cells, *e.g.*, sweet, sour, salty, and bitter. Such taste cell specific probes serve as invaluable tools in the generation of taste topographic maps that elucidate the relationship between taste cells of the tongue and taste sensory neurons leading to taste centers in the brain (*see, e.g.*, specification, page 6, lines 19-22). Such maps are also useful in pharmacological and food industries for customizing taste, *e.g.*, as probes and markers for taste-induced behaviors. These uses are not merely a starting point for "further experimentation." The nucleic acids of the invention have specific, substantial, and credible utility. Applicants therefore respectfully request that the rejection be withdrawn.

Rejection under 35 U.S.C. § 112, first paragraph: enablement

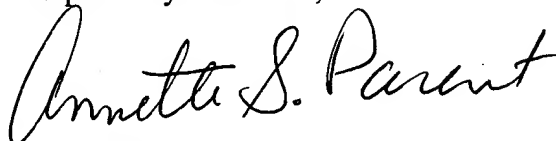
Claims 32-40, 46, and 47 were rejected as allegedly enabled in scope only for polynucleotides encoding a polypeptide of SEQ ID NO:3 or SEQ ID NO:4, but not for polynucleotides encoding polypeptides having about 70% identity to SEQ ID NO:3 or SEQ ID NO:4. See Office Action, page 4. Applicants have canceled the prior claims and have submitted new claims to recite nucleic acids consisting of a nucleotide sequence of SEQ ID NO:12 or 13, or nucleic acids encoding a polypeptide consisting of an amino acid sequence of SEQ ID NO 3 or 4. Applicants therefore respectfully request that the rejection be withdrawn.

CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 415-576-0200.

Respectfully submitted,

A handwritten signature in cursive script, reading "Annette S. Parent".

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